



PUBLIC

Cloud Security Dashboard Configuration

with Sample Data +

with SAP Analytics Cloud & Cloud Application Lifecycle Management

How To Guide

Table of contents

1. Abstract	4
2. Audience	5
3. Resources.....	6
4. Data Model	7
a. SAP Analytics Cloud Naming Convention	7
b. Data Model in SAP Analytics Cloud	8
5. Sample Data.....	10
6. Data Description.....	11
a. Data Delivered by SAP Cloud ALM API.....	11
b. Cloud Security Recommendations – Static Content.xlsx.....	12
7. SAP Cloud ALM API Connectivity.....	13
a. API Connectivity Test with SAP Business Accelerator Hub	13
b. SAP Analytics Cloud Connection to SAP Cloud ALM	16
i. Retrieve Client ID / Secret from SAP Cloud ALM tenant.	16
ii. Create SAP Analytics Cloud connection to SAP Cloud ALM tenant.	19
iii. Connect the SAP Analytics Cloud Model to the SAP Cloud ALM Connection	20
c. Schedule Data Import	26
i. Import Settings.....	26
ii. Data Import Scheduling.....	27
iii. Scheduling Settings	27
8. Result.....	29
9. SAP Analytics Cloud Dashboard Operations	32
a. Static Extension File Update	32
b. Clean-Up Sample Data	32
10. Terms and Conditions	33

List of Figures

Figure 1: SAP Analytics Cloud Security Data Model.....	7
Figure 2: Data Model Structure in SAP Analytics Cloud.....	8
Figure 3: Data Model Example of the ID Object.....	8
Figure 4: Data Model Structure - Example of Dimension Table.....	9
Figure 5: API Hub Try Out Section	13
Figure 6: SAP Cloud ALM API Instance	16
Figure 7: Example of SAP Analytics Cloud Compliance View	29
Figure 8: Compliance View, Example 2.....	31

List of Tables

Table 1: SAP Cloud ALM API Data Structure	11
Table 2: Static Content File Structure	12
Table 3: SAP Cloud ALM Connection Data	15
Table 4: OData Connectivity Data in SAP Analytics Cloud	19
Table 5: Filter Settings in SAP Analytics Cloud	23
Table 6: Description Compliance Status by Category	30

Changelog		
Time	Version	Comment
16.01.2024	v1.0	Document created
26.01.2024	v2.0	Document enhanced with Cloud ALM API Connectivity setup
01.02.2024	V2.1	Clarification on step-by-step import setup

1. Abstract

This document provides information on the consumption of the cloud security recommendations via the Cloud ALM API. It also explains how a data model from SAP Analytics Cloud can be used to visualize the compliance status of the provided security data.

Additionally, sample data is provided as part of the package to show how a data model could be built up. Data from an XLSX file enriches the data delivered by the API.

Note: Section 5 and Section 6 explain the sample files and are not required to setup the connectivity between SAP and Cloud ALM.

2. Audience

- Customers who want to use the Cloud ALM API to retrieve cloud security relevant data in its raw format.
- Customers who want to use the Cloud ALM API in combination with SAP Analytics Cloud to visualize the results by using the SAP Analytics Cloud Security Dashboard.
- Partners who want to build their own dashboard solution.

3. Resources

Security Recommendations:

- [Cloud Security Recommendations Overview](#)
- [BTP Security Recommendations](#)

Cloud ALM API:

- [Cloud ALM Analytics API](#)
- [API Guide for SAP Cloud ALM](#)
- [Configuration Stores of Cloud ALM](#)

SAP Analytics Cloud:

- [SAP Analytics Cloud](#)

4. Data Model

SAP provides a Cloud Security SAP Analytics Cloud Story as a template within SAP Analytics Cloud that customers can use as a basic dashboard or as a starting point to develop more comprehensive dashboards. This template is using the following data structure and combines two data sources:

- **Cloud ALM API** which will be queried as configured in SAP Analytics Cloud's data import scheduler.
- **Static Extension file** which will extend the information from the API based on information from the security recommendation help pages.

Note: this file must be periodically updated within SAP Analytics Cloud to get updates, e.g., when new cloud systems and services are coming into scope. See Section 9.a)

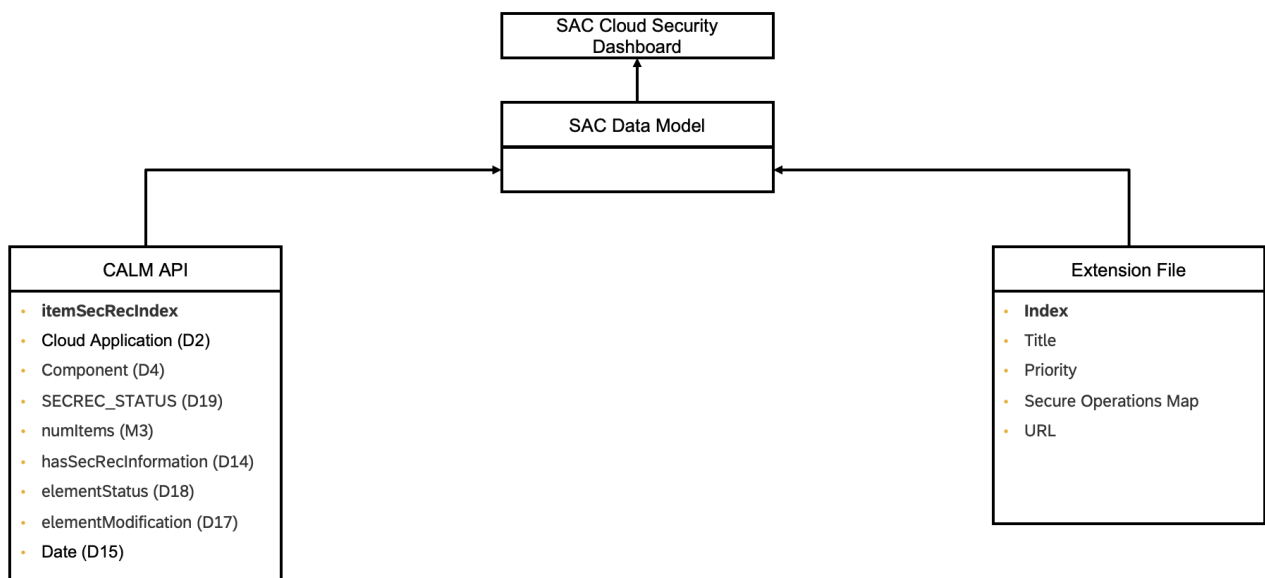


Figure 1: SAP Analytics Cloud Security Data Model

a. SAP Analytics Cloud Naming Convention

Object Name in SAP Analytics Cloud	Object Type	Description
SAP_CC_Security_Configuration	Story	SAP Analytics Cloud Story which is showing the Cloud Security Recommendations
SAP_CC_Security_Configuration	Model	SAP Analytics Cloud Data Model for the Cloud Security Recommendations delivered by the Cloud ALM API and the static extension file
SAP_CC_SecConfig_CALMAPI	Dimension Table	Reflects the static extension file within the SAP Analytics Cloud Data Model.

		Note: this table must be maintained once new cloud services are getting onboarded. See Section 9.a)
--	--	--

b. Data Model in SAP Analytics Cloud

- The imported data from the Cloud ALM API is stored in the “ID” object of the SAP Analytics Cloud Data Model.

SAP Modeler SAP_CC_Security_Configurat...			
Workspace	General	Edit	Data
Model Structure		View	Validation
Name	Description	Type	Additional Details
<input type="checkbox"/> Version	Version	Version	
<input type="checkbox"/> Date	Date	Date	
<input type="checkbox"/> SAP_CC_SecConfig_CALMAPI	SAP SEC Extended Information on Cloud Security Recommendation	SAP_CC_SecConfig_CALMAPI	
<input type="checkbox"/> ID	ID	ID	
<input type="checkbox"/> TFrom	TFrom	TFrom	
<input type="checkbox"/> Period	Period	Period	
<input type="checkbox"/> Resolution	Resolution	Resolution	
<input type="checkbox"/> Timezone	Timezone	Timezone	
<input type="checkbox"/> Provider	Provider	Provider	
<input type="checkbox"/> Version_internal	Version_internal	Version_internal	
<input type="checkbox"/> Query	Query	Query	
<input type="checkbox"/> Timestamp	Timestamp	Timestamp	
<input type="checkbox"/> Week	Week	Week	

Figure 2: Data Model Structure in SAP Analytics Cloud

- By clicking on the “ID” object, the Cloud ALM API data can be observed.

Member ID	Description	DSK	DSV	DSK	DSV	DSK	DSV	DSK	DSV	DSK	DSV	DSK	DSV	DSK	DSV	DSK	DSV
#	Unsigned																
063b35d-c585-4203-b8...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	0509881a-5640-4799-85...	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	storeLogid	0509881a-5640-4799-85...	storeLogCaption	System CredStore01Dev	storeid	5000100
1a411213-9db0-4a21-8...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	0509881a-5640-4799-85...	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	storeLogid	0509881a-5640-4799-85...	storeLogCaption	System CredStore01Dev	storeid	5000100
1a411213-9db0-4a21-8...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	0509881a-5640-4799-85...	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	storeLogid	0509881a-5640-4799-85...	storeLogCaption	System CredStore01Dev	storeid	5000100
2056881-5a02-4371-a...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	2056881a-e03b-437a-b9...	serviceName	CredStore02Dev	serviceNameDesc	CredStore 02 Dev (CSA)	storeLogid	2056881a-e03b-437a-b9...	storeLogCaption	System CredStore02Dev	storeid	5000100
2075a03-5a02-4384-8...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	0509881a-5640-4799-85...	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	storeLogid	0509881a-5640-4799-85...	storeLogCaption	System CredStore01Dev	storeid	5000100
2a48121-9721-4950-b...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	2056881a-e03b-437a-b9...	serviceName	CredStore02Dev	serviceNameDesc	CredStore 02 Dev (CSA)	storeLogid	2056881a-e03b-437a-b9...	storeLogCaption	System CredStore02Dev	storeid	5000100
0368d76-388a-489a-8...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	0509881a-5640-4799-85...	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	storeLogid	0509881a-5640-4799-85...	storeLogCaption	System CredStore01Dev	storeid	5000100
3b7089-851a-4c88-b...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	2056881a-e03b-437a-b9...	serviceName	CredStore02Dev	serviceNameDesc	CredStore 02 Dev (CSA)	storeLogid	2056881a-e03b-437a-b9...	storeLogCaption	System CredStore02Dev	storeid	5000100
9a47f02-464f-494b-8b...		serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	serviceid	2056881a-e03b-437a-b9...	serviceName	CredStore02Dev	serviceNameDesc	CredStore 02 Dev (CSA)	storeLogid	2056881a-e03b-437a-b9...	storeLogCaption	System CredStore02Dev	storeid	5000100

Figure 3: Data Model Example of the ID Object

Workspace						
Dimension Table						
General			Edit		Data	Validation
#	Member ID	Description	Priority	Secure Operations Map	URL	Component
1	#	Unassigned				
2	ARI-MFA-001	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Supplier Management
3	ARI-UMS-001	Access Control	Recommended	Roles and Authorizations	https://help.sap.com/doc...	SAP Business Network
4	BTP_CRS_0002	Encryption of API Payloa...	Critical	Security Hardening	https://help.sap.com/doc...	Credential Store
5	BTP_CRS_0006	Rotation of Binding and ...	Critical	Security Governance	https://help.sap.com/doc...	Credential Store
6	BTP_CRS_0007	Strong Authentication fo...	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Credential Store
7	BTP-ALS-0001	Update Dependent Libra...	Recommended	Custom Code Security	https://help.sap.com/doc...	Application Logging Ser...
8	BTP-CLC-0001	Security Fixes	Critical	Secure SAP Code	https://help.sap.com/doc...	Cloud Connector
9	BTP-CLS-0003	Monitor and update bind...	Recommended	Client Security	https://help.sap.com/doc...	Cloud Logging
10	BTP-CRS-0002	Encryption of API Payloa...	Critical	Security Hardening	https://help.sap.com/doc...	Credential Store
11	BTP-CRS-0003	Authorizations	Recommended	Roles and Authorizations	https://help.sap.com/doc...	Credential Store
12	BTP-CRS-0006	Rotation of Binding and ...	Critical	Security Governance	https://help.sap.com/doc...	Credential Store
13	BTP-CRS-0007	Strong Authentication fo...	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Credential Store
14	BTP-DES-0002	Token Lifecycle	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
15	BTP-DES-0003	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
16	BTP-DES-0004	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
17	BTP-IAS-0011	Audit Data	Advanced	Security Monitoring and ...	https://help.sap.com/doc...	Identity Authentication S...
18	BTP-IAS-0018	Disclaimer	Advanced	Regulatory Process Com...	https://help.sap.com/doc...	Identity Authentication S...
19	BTP-IAS-0019	Corporate Domain	Advanced	Awareness	https://help.sap.com/doc...	Identity Authentication S...
20	BTP-LMC-0006	Audit Logging	Recommended	Audit & Fraud Managem...	https://help.sap.com/doc...	SAP Landscape Manage...
21	BTP-UAA-0003	Token Lifecycle	Recommended	Client Security	https://help.sap.com/doc...	Authorization and Trust ...
22	BTP-UAA-0008	User Lifecycle	Advanced	User and Identity Manag...	https://help.sap.com/doc...	Authorization and Trust ...
23	BTP-UAA-0009	Service Specific	Advanced	Risk Management	https://help.sap.com/doc...	Authorization and Trust ...
24	BTP-WFM-0005	Asset Backup	Recommended	Data Privacy & Protection	https://help.sap.com/doc...	Workflow Management
25	S4-S4CE-BU-0005	Business Users: Auto-Lock	Recommended	User and Identity Manag...	https://help.sap.com/doc...	S4
26	S4-S4CE-COM-0004	Communication Systems...	Advanced	Security Governance	https://help.sap.com/doc...	S4
27	S4-S4CE-LOG-0001	Read Access Logging C...	Advanced	Data Privacy & Protection	https://help.sap.com/doc...	S4
28	SF-HXM-0007	Audit Data	Recommended	Security Monitoring and ...	https://help.sap.com/doc...	SAP SuccessFactors HX...
29	SF-PAY-0010	Obsolete Clients	Recommended	Security Hardening	https://help.sap.com/doc...	SAP SuccessFactors Em...
30	SSC-ENC-001	Encryption	Recommended	Security Hardening	https://help.sap.com/doc...	Cloud for Customer

Note: details to the Cloud ALM API can be found [here](#):

5. Sample Data

The provided sample data is reflecting the data model described in Section 4. It is already part of the package.

- **Cloud Security Recommendations – Static Content.xlsx**

This file provides additional data required for analysis, but it is not part of the content delivered by the Cloud ALM API. It provides for example the information of the SAP Secure Operation Map and the priority status.

6. Data Description

The Cloud ALM provides the data via the [Cloud ALM Analytics API](#). The data is delivered as:

- Dimensions with column names like D1K (Key) and D1V (Value)
- Measures like M1, M2, etc., with column name like M1K (Key) and M1V (Value)
- Additional attributes like timestamp

The following dimensions are relevant for the security dashboard:

a. Data Delivered by SAP Cloud ALM API

Attribute	Cloud ALM API Attribute	Description	Example
itemSecRecIndex	D20	Security Recommendation ID as documented on the security recommendation help pages	BTP-CRS-0002
Cloud Application	D2	Main cloud application	BTP
Component	D4	Potential Subcomponent of the main cloud application	Credential Store
SECREC_STATUS	D19	Compliance or Non-Compliance	COMPLIANT
numItems	M3	Counter as Measure Attribute	1
hasSecRecInformation	D14	Indicator if a recommendation is delivered. Should always be TRUE	TRUE
elementStatus	D18	Status of the reported element	Current
elementModification	D17	Indicator if the item was reported the first time or just updated	Initial
Date	D15	Date when the item was reported.	11/20/2023

Table 1: SAP Cloud ALM API Data Structure

b. Cloud Security Recommendations – Static Content.xlsx

Column	Description	Example
itemSecRecIndex	Security Recommendation ID as documented on the security recommendation help pages	BTP-CRS-0002
Title_Topic	Topic description as described on the security recommendation help pages	Encryption of API Payloads
Risk Level	Risk level derived from the priority	Critical
Priority	Priority Level documented on the security recommendation help page	Critical
Secure Operations Map	Area of SAP's Secure Operations Map	Security Hardening
URL	URL to the SAP help page with security recommendations	Link

Table 2: Static Content File Structure

This data is derived from the Security Recommendation help pages of the LoBs. In case you add new applications or services, an update might be required.

7. SAP Cloud ALM API Connectivity

SAP Cloud ALM provides its data via an OData Service from the SAP Cloud ALM Analytics API. This section will describe how:

- The API can be tested via the Business Accelerator Hub (api.sap.com)
- and how the API will be called from SAP Analytics Cloud.

a. API Connectivity Test with SAP Business Accelerator Hub

Note: Before you start the connection between SAP Analytics Cloud and SAP Cloud ALM, it is recommended to test the SAP Cloud ALM connectivity on the [SAP Business Accelerator Hub](#). With this connection, you can validate if the required connection data (URL and credentials) is valid and if it can also be used later on for the SAP Analytics Cloud connectivity.

- Use the “Try Out” section of the SAP Cloud ALM analytics service,
- and create a new test environment.

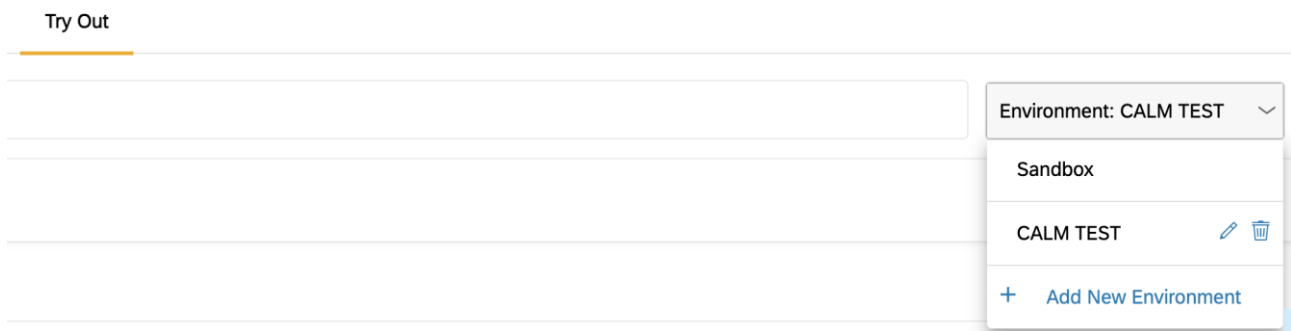


Figure 5: API Hub Try Out Section

- Enter the Customer’s SAP Cloud ALM Subaccount data into the connectivity form of the SAP Business Accelerator Hub.

Edit Configuration

Configure an environment for your licensed product to test APIs using your data.

API Name:  SAP Cloud ALM Analytics

Basic Information

Display Name:*

CALM TEST

Starting URL:*

https://{tenant}.eu10.alm.cloud.sap/api/calm-analytics/v1

Tenant *

dev

Resulting URL

Resulting URL:*

https://dev.eu10.alm.cloud.sap/api/calm-analytics/v1

Authentication

Authentication Type*

OAuth 2.0 Application Flow

Client ID  *

Client Secret  *

Token URL*

https://{tenant}.eu10.alm.cloud.sap/data.authentication.eu10.hana.ondemand.com/oauth/token

Identityzone *

calm-dev-eu10-0

Region *

eu10

For the input form, the following data is required:

Configuration Item	Value	Description
Display Name	Free Text	Name of the configuration
Starting URL	URL of the SAP Cloud ALM Analytics API based on the customer's individual tenant.	URL of the analytics API will be automatically generated via the tenant ID.
Tenant	<Custom Value>	
Authentication Type	OAuth 2.0 Application Flow	Authentication method based on client ID / secret credential exchange with Oauth2
Client ID	<Custom Value> retrieved from SAP Cloud ALM Subaccount with SAP BTP Cockpit	
Secret	<Custom Value> retrieved from SAP Cloud ALM Subaccount with SAP BTP Cockpit	
Token URL	<identity zone> .authentication.<region>.com/oauth/token	
Identity Zone	<SAP Cloud ALM Subaccount organization name (Org Name)>	
Region	<SAP BTP Region (https://help.sap.com/docs/btp/sap-business-technology-platform/regions-and-api-endpoints-available-for-cloud-foundry-environment?version=Cloud)>	

Table 3: SAP Cloud ALM Connection Data

- Press the "RUN" Button. Results will be shown in the part of the Response Body with the HTTP OK, Code 200.

```
{
  "@context": "$metadata#DataSet",
  "@metadataEtag": "W/\"18a6694ff6f1ccc9cb6d7e00f1c7a024c1bbc29ed1ad612afdb40f8cad327d48\"",
  "@count": 56,
  "value": [
    {
      "ID": "5d3df7b5-3e4f-4aed-b9e9-d1066c90130d",
      "tfrom": "20240116000000",
      "firstWeekDay": "M0",
      "period": "L7D",
      "resolution": "D",
      "timeZone": "+00:00",
      "provider": "DEMO_TASKS",
      "version": "v2",
      "query": "Project=CRM",
      "timestamp": "20240122000000",
      "date": "20240122",
      "until": "20240122"
    }
  ]
}
```

b. SAP Analytics Cloud Connection to SAP Cloud ALM

To setup the connection between SAP Analytics Cloud and SAP Cloud ALM, the same data is required, as described in Section 7(a), Table 3: SAP Cloud ALM Connection Data

i. Retrieve Client ID / Secret from SAP Cloud ALM tenant.

- Open your BTP cockpit and create a new instance of the service “SAP Cloud ALM API” within the Cloud Foundry Space. This service instance will hold the key and the needed authorizations.

The screenshot shows the 'New Instance or Subscription' wizard in the SAP BTP cockpit. It has three steps: 1. Basic Info, 2. Parameters, and 3. Review. Step 1 is active. The instructions say 'Enter basic info for your instance or subscription.' The form fields are: 'Service' (dropdown menu showing 'SAP Cloud ALM API'), 'Plan' (dropdown menu showing 'standard'), and 'Instance Name' (text input field containing 'CALM_Analytics_API'). At the bottom right, there are three buttons: 'Next >', 'Create', and 'Cancel'.

Figure 6: SAP Cloud ALM API Instance

- In addition, following scopes are also needed to access “Configuration and Security Analysis” data:

- calm-api.csa.read
- calm-api.csa.personal.read

Note: later scope provides access to personal data.

New Instance or Subscription

1 Basic Info 2 Parameters 3 Review

Configure instance parameters. ⓘ

Upload a JSON file:

Select JSON file Browse...

Or specify the parameters in JSON format: Clear

```

1 {
2   "xs-security": {
3     "xsappname": "CALMAnalyticsAPI",
4     "authorities": [
5       "$XSMASMASTERAPPNAME.calm-api.analytics.read",
6       "$XSMASMASTERAPPNAME.calm-api.analytics.providers.read",
7       "$XSMASMASTERAPPNAME.calm-api.demo-tasks.read",
8       "$XSMASMASTERAPPNAME.calm-api.projects.read",
9       "$XSMASMASTERAPPNAME.calm-api.tasks.read"
10    ]
11  }
12 }

```

< Back Next > Create Cancel

- Create the Service Instance

New Instance or Subscription

1 Basic Info 2 Parameters 3 Review

Review and verify the instance details.

CALM_Analytics_API

Service: SAP Cloud ALM API

Service Plan: standard

ⓘ Creating an instance might take a while.

< Back Create Cancel

- Create a key from the service instance by pressing the “Create” button.

The screenshot shows the 'New Service Key' dialog box for the 'CALM_Analytics_API' service instance. The dialog has a title bar 'New Service Key'. Inside, there is a 'Service Key Name' field with the value 'CALM_Analytics_API_Key'. Below this is a 'Configure Binding Parameters' section with a help icon. It includes an 'Upload a JSON file' section with a 'Select JSON file' button and a 'Browse...' button. Below that is a section 'Or specify the parameters in JSON format:' with a 'Clear' button and a large text area for JSON input. At the bottom are 'Create' and 'Cancel' buttons.

- Extract the client, secret and URL from the new created key.

The screenshot shows the 'Credentials' dialog box for the 'CALM_Analytics_API_Key'. It has a dropdown menu showing 'CALM_Analytics_API_Key'. Below the dropdown are two tabs: 'Form' and 'JSON'. The 'JSON' tab is selected, showing a JSON configuration. The JSON is as follows:

```

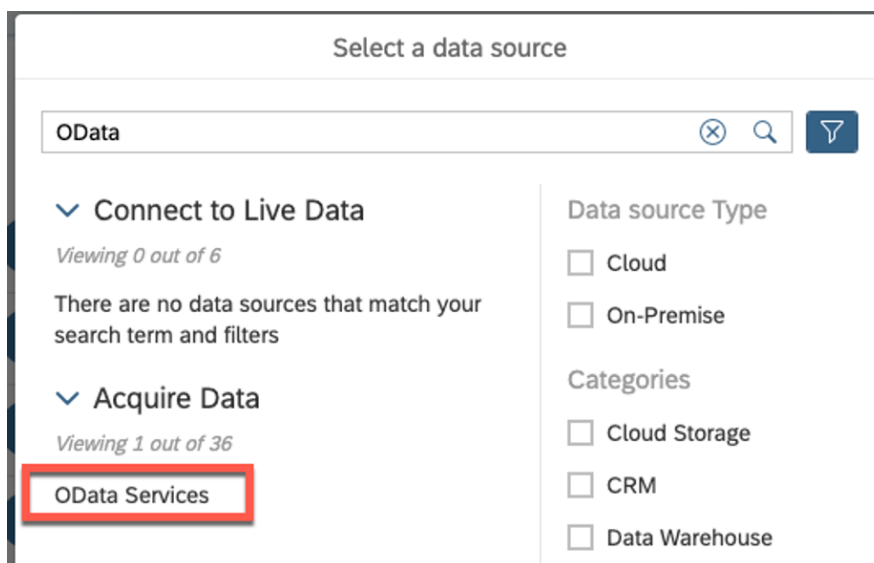
1 {
2   "endpoints": {
3     "Api": "https://api.calm-analytics.com",
4   },
5   "uaa": {
6     "clientid": "calm-analytics-api",
7     "clientsecret": "calm-analytics-api-secret",
8     "identityzone": "calm-analytics",
9     "identityzoneid": "calm-analytics-identityzone",
10    "tenantid": "calm-analytics-tenant",
11    "tenantmode": "tenant",
12    "sbnurl": "https://api.calm-analytics.com",
13    "apiurl": "https://api.calm-analytics.com",
14    "verificationkey": "-----BEGIN PUBLIC KEY
15    [Redacted Public Key]

```

At the bottom of the dialog are 'Copy JSON', 'Download', and 'Close' buttons.

ii. Create SAP Analytics Cloud connection to SAP Cloud ALM tenant.

- In SAP Analytics Cloud create an OData Services connection.



- Enter the following parameters:

Configuration Item	Value	Comment
Data Service URL	https://eu10.alm.cloud.sap/api/calm-analytics/v1/odata/analytics/	Assumed that the tenant is in the European region EU10
Authentication Type	OAuth 2.0 Client Credential	
OAuth Client Id	<clientid>	retrieved from the service key (see above)
Secret	<clientsecret>	retrieved from the key (see above)
Token URL	<url> concatenated with path "/oauth/token"	url retrieved from the key (see above). Looks like: https://<subdomain>.authentication.<region>.hana.ondemand.com/oauth/token
Scope	Leave this blank	

Table 4: OData Connectivity Data in SAP Analytics Cloud

Edit OData Services Connection

Description

CALM_

☐ Connect to an SAP OData service ⓘ

☐ Connect to an On-Premise OData service

*Data Service URL

<https://eu10.alm.cloud.sap/api/calm-analytics/v1/odata/v4/analytics/>

ⓘ Anything following "?" is only used for authentication and will not affect queries.

*Authentication Type

OAuth 2.0 Client Credentials

*OAuth Client ID

*Secret

*Token URL

.authentication.eu10.hana.ondemand.com/oauth/token

Scope

ⓘ Scope may be required by the data source. Enter scopes separated by spaces.

OK Cancel

iii. Connect the SAP Analytics Cloud Model to the SAP Cloud ALM Connection

- Open the delivered model “SAP_CC_Security_Configuration” and navigate to “Data Management”.
- Click the “Import Data” icon to create a new import. Select “OData Services” as source. Select the connection you created above from the drop-down list and click “Next”.

Import Data from OData Services

Target Model

*Model Name

SAP_CC_Security_Configuration

Select Data

*Connection

CALM_MY_CONNECTION

☒ Create a new query

Next

Cancel

- Create a new query: select “DataSet” and press “Next”.

New Query for OData Services

Query Information

*Query Name

My_Query

☒ Build a Query

☐ Freehand Query

Search



DataSet

DemoTasks

DynamicDataSet

Requirements

Click to Deselect

Back

Next

Cancel

- Select the data as shown below.

Selected Data (61)

Clear Selection

AA d10k	X	AA d10v	X	AA d11k	X	AA d11v	X	AA d12k	X	AA d12v	X
AA d13k	X	AA d13v	X	AA d14k	X	AA d14v	X	AA d15k	X	AA d15v	X
AA d16k	X	AA d16v	X	AA d17k	X	AA d17v	X	AA d18k	X	AA d18v	X
AA d19k	X	AA d19v	X	AA d1k	X	AA d1v	X	AA d20k	X	AA d20v	X
AA d2k	X	AA d2v	X	AA d3k	X	AA d3v	X	AA d4k	X	AA d4v	X
AA d5k	X	AA d5v	X	AA d6k	X	AA d6v	X	AA d7k	X	AA d7v	X
AA d8k	X	AA d8v	X	AA d9k	X	AA d9v	X	AA date	X	AA dayOfWeek	X
AA firstWeekDay	X	AA hour	X	AA m1k	X	AA m1v	X	AA m2k	X	AA m2v	X
AA m3k	X	AA m3v	X	AA minute	X	AA period	X	AA provider	X	AA query	X
AA resolution	X	AA tfrom	X	AA timestamp	X	AA timeZone	X	AA version	X	AA week	X
ID	X										

- Set filters and filter values as explained below.

Edit OData Services Query



Available Data

Search

☐ Select entire table ⓘ

DataSet

AA d10k
AA d10v
AA d11k
AA d11v
AA d12k
AA d12v
AA d13k
AA d13v
AA d14k
AA d14v
AA d15k

Selected Data (61)

Clear Selection

AA d10k	X	AA d10v	X	AA d11k	X
AA d11v	X	AA d12k	X	AA d12v	X
AA d13k	X	AA d13v	X	AA d14k	X
AA d14v	X	AA d15k	X	AA d15v	X
AA d16k	X	AA d16v	X	AA d17k	X

Filters

Clear Selection

AA resolution	Equal to	D	X
AA provider	Equal to	CCDB_STORE_...	X
AA period	Equal to	L10D	X
AA query	Equal to	storeHasSecrec...	X

Back

Next

Cancel

Configuration Item	Value	Comment
provider	CCDB_STORE_DATA	The technical name of the data provider.
period	L10D	<p>Selecting the data from the last 10 days.</p> <p>Note that you can also choose another period. It is recommended to use the last 2 days (L2D) which would</p>

		work best for the current dashboard setup in SAP Analytics Cloud.
resolution	D	D stand for Days and is also relevant for the timeframes for the data extraction.
query	"storeHasSecrec=X"	<p>Note: to filter only the values which are relevant for cloud services the generic dimension D14 (storeHasSecrec) carries an "X" as a marker. In the filter settings of SAP Analytics Cloud this must configured.</p> <p>E.g. for single values like: Query="storeHasSecrec=X"</p> <p>E.g. for multiple values like: Query="storeHasSecrec=X+serviceId=f4f971bb-6109-400a-b776-297a641235f8"</p>

Table 5: Filter Settings in SAP Analytics Cloud

- The OData interface offers:
 - A set of predefined dimensions (provider, version, period...),
 - 30 generic dimensions (d1k/d1v, d2k/d2v...d20k/d20v) and
 - 15 generic measures (m1k/m1v, m2k/m2v... m10k/m10v).
 - Additional fields e.g., timestamp, version, ...
- Generic names ending with letter "k" contain the name of the key of this dimension or measure, while generic names ending with letter "v" contain the value of a dimension or measure.
- **Note:** The number of attributes for the SAP Analytics Cloud data model is restricted to 100 but the SAP Cloud ALM connection delivers more than 100 attributes. Therefore, data must be removed. For example, the attributes from D20 to D30 not required since no data is provided from SAP Cloud ALM for the SAP Analytics Cloud dashboard.


Find more information on the interface and on the predefined dimensions [here](#)

- Set the Batch Size and press Create.

Query Batch Size

Batch Size: *

— 50,000 +

 Batch size corresponds to the number of records retrieved in a single request. [Learn more](#)

Back **Create** Cancel

Your Import Job is now created.

Next, you must define the Import Settings by clicking on the three dots on the right side of your import job, Edit, Import Settings.

- Click “Next” on the first screen. To define the mapping of the import job, follow the steps below.
- Most of the mappings are already in place.
- Make sure to map “d20v” to “SAP_CC_SecConfig_CALMAPI” on this screen and press “Next”.

The screenshot shows the SAP Data Foundation 'Map to Facts' interface. The 'Source Columns' list on the left includes various columns like 'AA_VersionVersion', 'AA_VersionCategory', 'AA_VersionType', 'DateDATE', 'z2_DateYear', 'z2_DateQuarter', 'DateMonth', 'z2_DateDAY', 'AA_SAP_CC_SecConfig_CALMA...', 'AA_IDId', 'AA_IDDescription', 'z2_TFromId', 'AA_TFromDescription', 'AA_PeriodId', 'AA_PeriodDescription', and 'AA_ResolutionId'. The 'Unmapped (0)' list is empty. The 'Mapped (16)' list on the right shows the following mappings:

Source	Target
Default Value	Version
public Actual to all rows	public Actual
DateDATE	Date
20240226	2023-01-01 - 2024-12-31
AA_D20V	SAP_CC_SecConfig_CALMAPI
BTP-DES-0002	#, ARI-MFA-001, ARI-UMS-001, BTP-ALS-0001, BTP-CLC-0001
AA_IDId	ID
GUID-00021	#, 005d6de0-db54-4bf1-8847-920e1435fa7, 032e8035-42
z2_TFromId	TFrom
20240226000000	#, 20230726000000, 20230923000000, 20230928000000
AA_PeriodId	Period
L900	#, L100, L1800, L1D, L900
AA_ResolutionId	Resolution
D	#, D
AA_TimezoneId	Timezone
+00:00	#, +00:00
AA_ProviderId	Provider
CCDB_STORE_DATA	#, CCDB_STORE_DATA
AA_Version_InternalId	Version_Internal
v1	#, v1
AA_QueryId	Query
#	#, L180D
z2_TimestampId	Timestamp
20240226000000	#, 20230731000000, 20230801000000, 20230820000000
WeekId	Week

The 'Mapping completed!' message is displayed in the center, stating: 'All source data are now mapped with their target data. Go to the next step to review your import.'

- Map the remaining attributes to the “ID” dimension table by dragging and dropping the source column names to the corresponding targets and click ‘Next’ when done.

New features are available. [Check them out.](#)

SAP Modeler NewDataForDemo.csv

Map Properties General Actions

Source Columns

Search...

Dimension Properties

Public dimensions are excluded from the list below. To update their members and properties, manage your imports directly in each public dimension.

Source Column	Target	Target Value
AA ID14V X	Member ID	#. 005d6de0-d54-4bf1-8847-920e1435ffa7, 032e80d5...
AA D15K elementDate	Description	Unassigned, (Empty Value)
z2 D15V 20240226000000	D1K	serviceType, (Empty Value)
AA D16K (Empty Value)	D1V	SCP_CREDSTORE, (Empty Value)
AA D16V (Empty Value)	D2K	serviceTypeLabel, (Empty Value)
AA D17K elementModification	D2V	SAP Credential Store, SAP Destination Service, SAP Clo...
AA D17V INITIAL	D3K	serviceId, (Empty Value)
AA D18K elementStatus	D3V	d50f681a-5640-4799-85c6-fee569e34273, 205ff04-ec0...
AA D18V CURRENT	D4K	serviceName, (Empty Value)
AA D19K itemSecRecStatus	D4V	CredStore01Dev, CredStore02Dev, Destination Service, ...
AA D19V COMPLIANT	D5K	serviceNameDesc, (Empty Value)
AA D20K (Empty Value)	D5V	CredStore 01 Dev (CSA), CredStore 02 Dev (CSA), (Emp...
AA D20V BTP-DES-0002	D6K	storeLscId, (Empty Value)
AA M1K numChanges	D6V	d50f681a-5640-4799-85c6-fee569e34273, 205ff04-ec0...
AA M2K numStores	D7K	storeLscCaption, (Empty Value)
AA M3K numItems	D7V	System CredStore01Dev, System CredStore02Dev, (Emp...
	D8K	scId, (Empty Value)
	D8V	S00150, (Empty Value)
	D9K	scIdDesc, (Empty Value)
	D9V	Credential Configuration, (Empty Value)
	D10K	storeId, (Empty Value)

Next Save and Exit Cancel

New features are available. [Check them out.](#)

SAP Modeler NewDataForDemo.csv

Map Properties General Actions

Source Columns

Search...

Dimension Properties

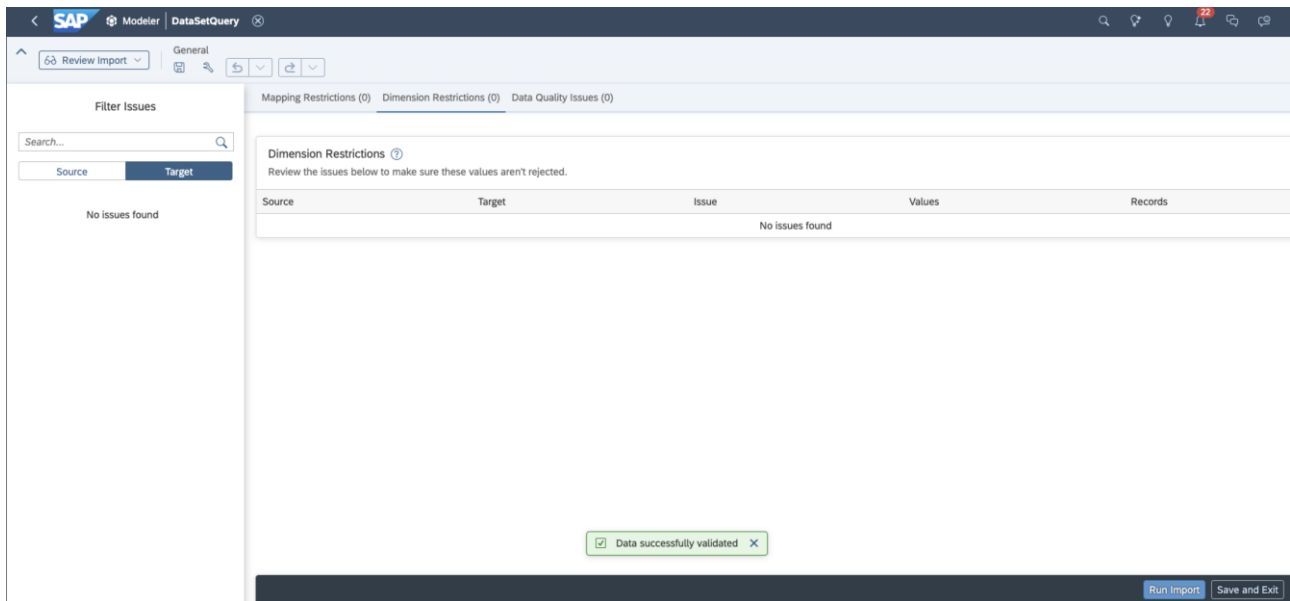
Public dimensions are excluded from the list below. To update their members and properties, manage your imports directly in each public dimension.

Source Column	Target	Target Value
AA D11K	D11K	storeNameExt, (Empty Value)
AA D11V	D11V	(Empty Value)
AA D12K	D12K	storeName, (Empty Value)
AA D12V	D12V	CRS_CONFIG, (Empty Value)
AA D13K	D13K	storeType, (Empty Value)
AA D13V	D13V	TABLE, (Empty Value)
AA D14K storeHasSecrec	D14K	storeHasSecrec, (Empty Value)
AA D14V X	D14V	X, (Empty Value)
AA D15K elementDate	D15K	elementDate, (Empty Value)
z2 D15V 20240226000000	D15V	20231208000000, 20231214000000, 20231206000000, ...
AA D16K (Empty Value)	D16K	elementDateTo, (Empty Value)
AA D16V (Empty Value)	D16V	20231230000000, 20231227000000, 20231229000000, ...
AA D17K elementModification	D17K	elementModification, (Empty Value)
AA D17V INITIAL	D17V	INITIAL, UPDATED, (Empty Value)
AA D18K elementStatus	D18K	elementStatus, (Empty Value)
AA D18V CURRENT	D18V	CURRENT, OLD, (Empty Value)
AA D19K itemSecRecStatus	D19K	itemSecRecStatus, (Empty Value)
AA D19V COMPLIANT	D19V	COMPLIANT, NONCOMPLIANT, (Empty Value)
AA D20K (Empty Value)	D20K	itemSecRecIndex, (Empty Value)
AA D20V BTP-DES-0002	D20V	(Empty Value)
AA M1K numChanges	M1K	numChanges, (Empty Value)
AA M2K numStores	M2K	numStores, (Empty Value)

Drop a column Map to preview

Next Save and Exit Cancel

- Check that there are no errors on the last screen.



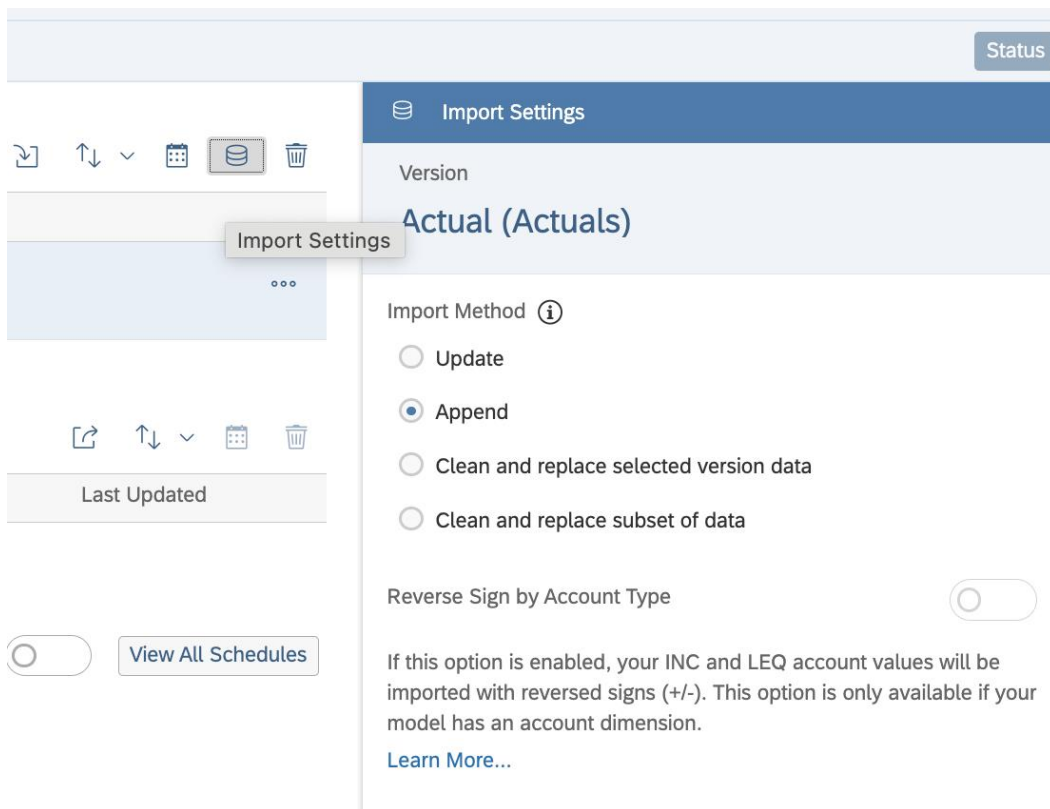
- You can now run the import by pressing the “Run Import” button. To remove the delivered demo data from your system, change the “Import Method” to “Clean and replace selected version data”.

c. Schedule Data Import

Security configuration data needs to be imported regularly, e.g., once a day, to display up-to-date data in the SAP Analytics Cloud Security Dashboard. Please proceed as follows.

i. Import Settings

- Select your import job in the list and click the “Import Settings” icon. Choose the import method “Append” and press “Save”.



ii. Data Import Scheduling

To update the data in SAP Analytics Cloud, the Import Job created earlier needs to be scheduled as described in the [standard documentation](#).

iii. Scheduling Settings

- Choose the schedule icon in the data management view. Set the schedule as “Repeating” suiting your requirements and press Save.

Status

Schedule Settings

[Set a Dependency](#) ⓘ

Frequency
☐ None
☐ Once
☒ Repeating

Recurrence

Daily
▼

Every **Day(s)**

Start Date

Dec 27, 2023
📅

End Date

Dec 31, 2023
📅

Time Zone

(GMT+01:00) Berlin
▼

Start Time (24-Hour Clock)






22:51
🕒

- Once the data import is scheduled, the overview will show the daily scheduled OData Service import.




Workspace

Data Management




General





Edit




Data



View









Validation



Import / Export Jobs

API Subscriptions

Import Jobs

Name	Query	Schedule	Last Run	Last Known Status
<div><div><input type="checkbox"/></div><div>DataSetQuery</div></div>	<div>DataSetQuery</div> <div> OData Services</div>	<div>Daily</div> <div>Every day at 22:51:00</div>	<div>Jan 19, 2024</div> <div>16:16:15</div>	<div><div></div><div></div><div></div><div></div><div></div></div>

8. Result

With the provided sample files, it is possible to visualize some of the SAP Analytics Cloud Dashboard Template features, as shown in Figure 7 below. The story is prepopulated with sample data to provide an overview of the security dashboard capabilities to customers.

With the provided sample data files, compliance officers or a cloud security administrator, responsible for operations and security & compliance can use SAP Analytics Cloud dashboard template as central source of truth for gathering information to get analytical insights into the security status of their SAP Cloud Solutions and to identify a risk score.

As displayed in the example given in Figure 7, one can see that 5 cloud systems are connected to the dashboard and overall, 30 security controls are in place. For these security controls, 16 items are reported to the dashboard as non-compliant. Out of these 53% non-compliant items, one can notice 40% that are critical, 37% with a high criticality and 23% with medium items to solve. It is also worth noticing that over the last 24 hours no new items have been received; a security compliance officer might be interested in what happened on the last day, when the last input came in.

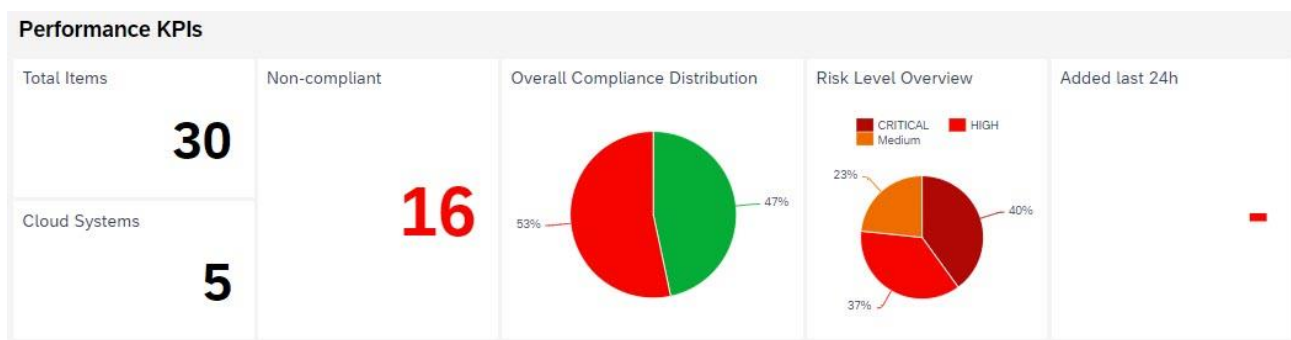


Figure 7: Example of SAP Analytics Cloud Compliance View

Figure 7 shows the following key figures:

- Total Items: Number of controls which are checked.
- Cloud Systems: Number of cloud systems which are connected and providing data
- Non-compliant: Total number of non-compliant items
- Overall Compliance Distribution: Percentage rate of compliant and non-compliant items
- Risk Level Overview: Percentage of Critical, High and Medium items of non-compliance
- Added last 24h: Items received during the last 24 hours

Dashboard Chart	Description
Compliance per Risk Level	Total number of risks including the compliance and non-compliance
Compliance per Cloud Application	Total number of compliance / non-compliance. Items per cloud solution
Compliance per Component	Total number of compliance / non-compliance Items per component of cloud solution
Compliance per Topic	Total number of compliance / non-compliance Items per topic as documented in the Cloud Security Recommendations
Compliance by Secure Operation Map	Total number of compliance / non-compliance Items per area of SAP ´s secure operation map as documented in the Cloud Security Recommendations

Table 6: Description Compliance Status by Category

The visualization example in Figure 8 shows the different compliance status by different aggregation attributes. Overall, it displays the compliance status per categories like the risk level, or the cloud application that are affected and the components, the topics and the items spread over the SAP secure operations map.

The SAP Analytics Cloud dashboard template offers the possibility to click on any item and to drill-down to the related categories. For instance, one can spot the most critical non-compliant items and check which cloud application is the most affected.

Another view can provide more details on the component for instance Destination Service which contains the most non-compliant items to fix. The view on the topic would provide additional input, showing for instance, that the token lifecycle is impacted. Finally, the view of the compliance per SAP's secure operations map reflects which, in this case, Authentication & Sign-On is concerned.



Figure 8: Compliance View, Example 2

More visualization screens are also available, to facilitate the analysis of the security status of SAP Cloud Solutions.

9. SAP Analytics Cloud Dashboard Operations

a. Static Extension File Update

- The current data model provides a static extension file which delivers all the data which is not part of the SAP Cloud ALM Analytics API like described in Section 6.b).
- Based on the onboarding of new SAP Cloud Services over time an update of this file is needed. Use the corresponding Security Recommendation help pages (see Section 3) to update the static extension file.
- The static extension must be maintained in the SAP Analytics Cloud in the dimension table **SAP_CC_SecConfig_CALMAPI** of the SAP Analytics Cloud data model.

b. Clean-Up Sample Data

- The provided SAP Analytics Cloud template is equipped with Sample Data. Please make sure that the sample data is deleted via the Data Management view once real cloud application data is received via the OData API.

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